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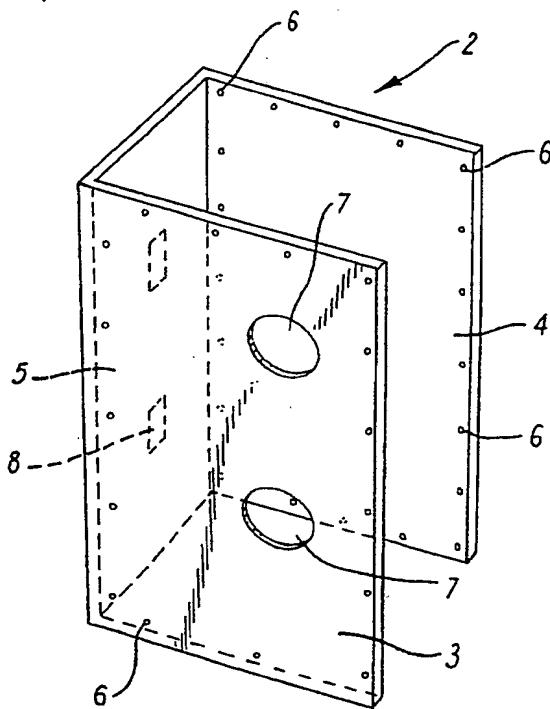
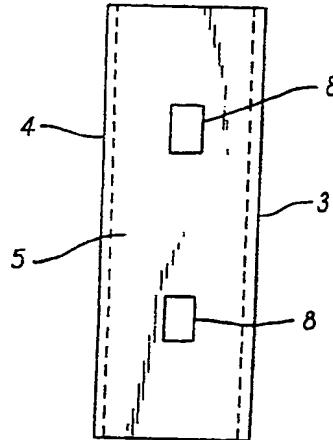
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GB 2258262 A GB 2201994 A GB 2197677 A  
US 4139999 A US 3936085 A US 3934910 A  
US 3888530 A(71) Applicant  
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## (54) Security device for doors and windows

(57) A security device comprises a first C-shaped plate (2) providing reinforcement to an opening member such as a door or window in the proximity of a locking means, and a second plate (10) for providing reinforcement to the frame or jamb surrounding the door or window. The security device may also include protected chain bars for supporting a chain between the opening member and its surround. The jamb plate may be flat, or C-shaped so as to surround the shape of the jamb.

FIG. 1FIG. 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1990.

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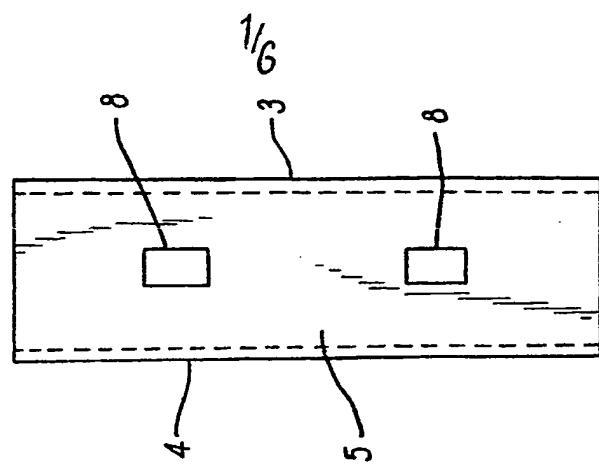


Fig. 2

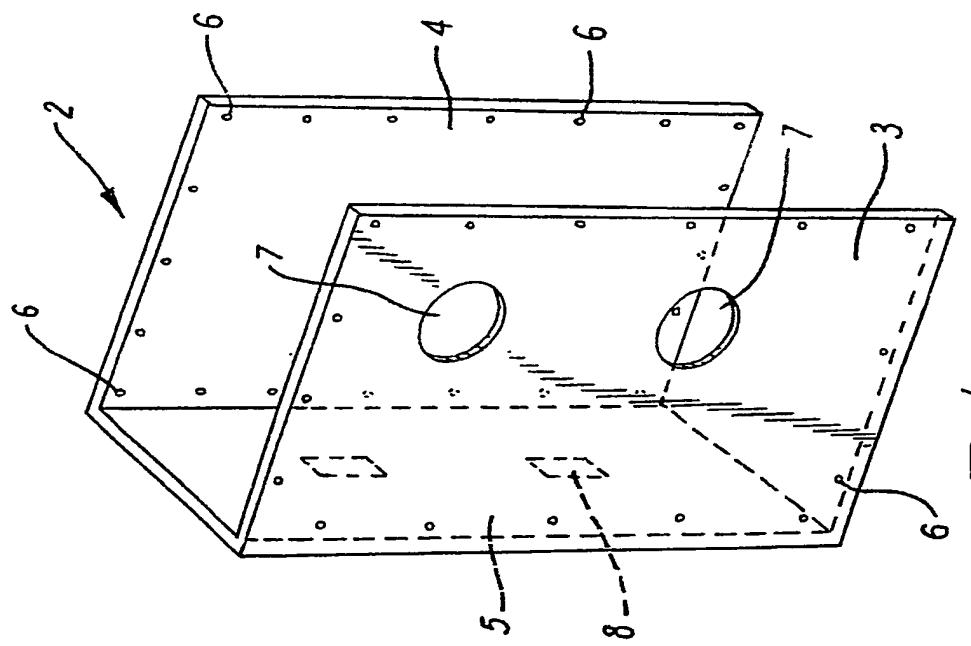


Fig. 1

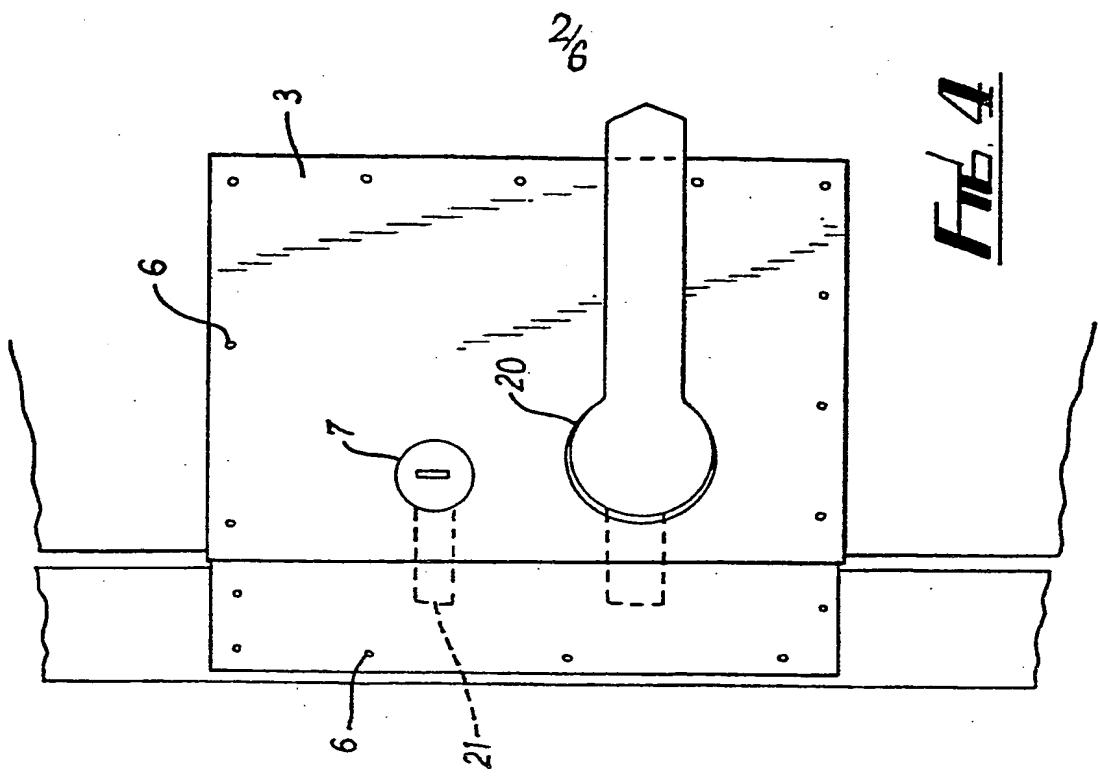


Fig. 4

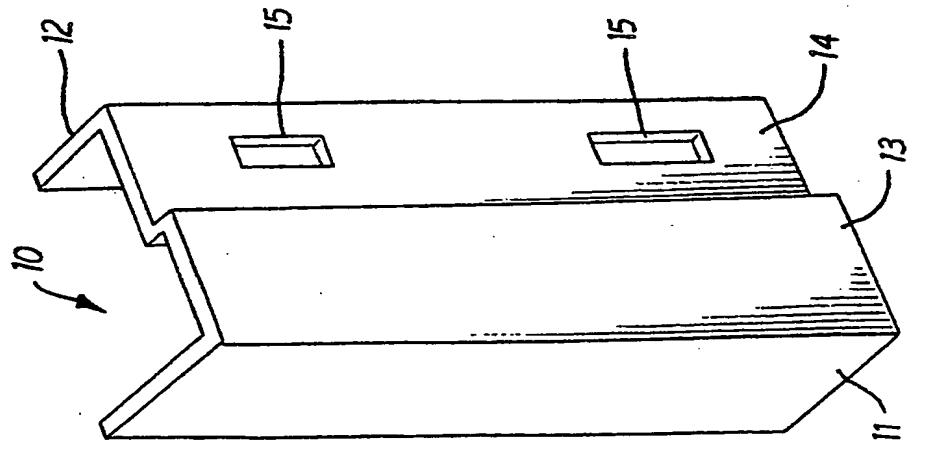
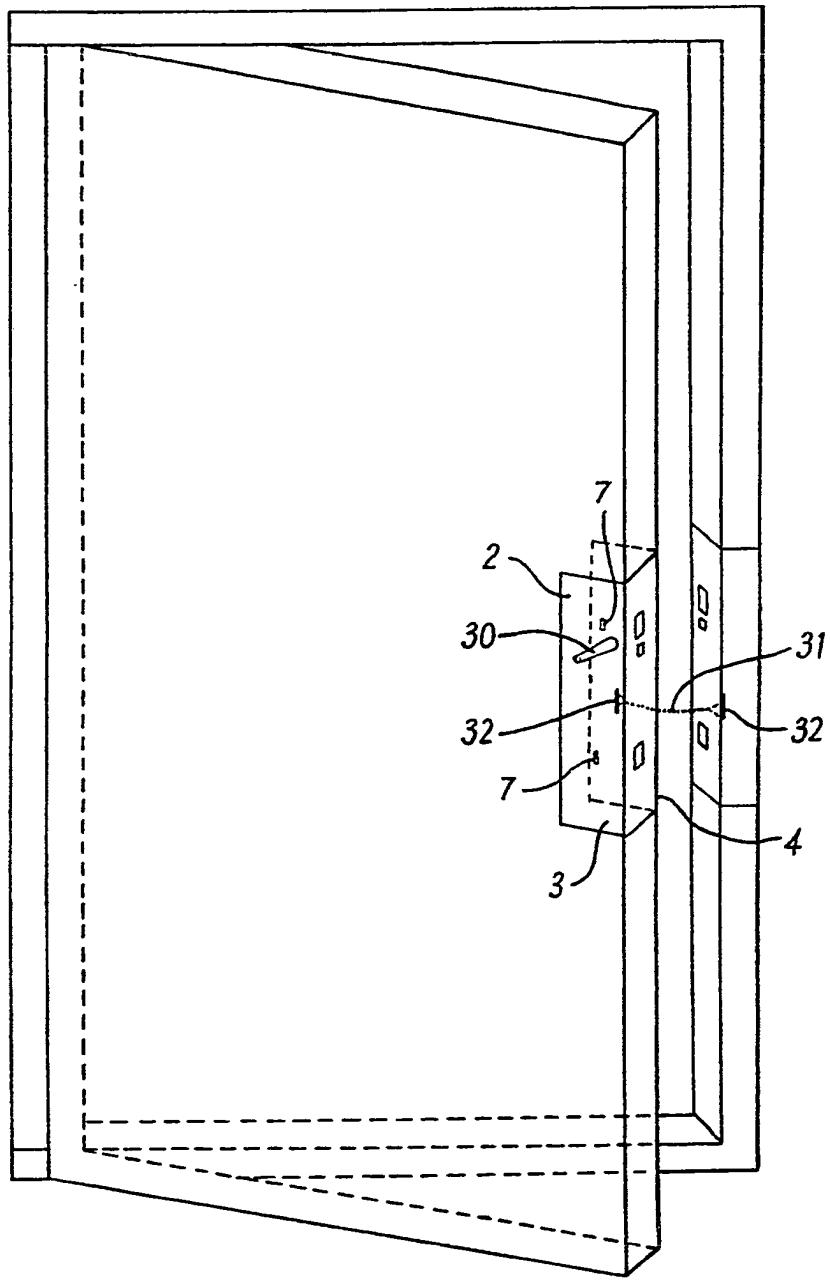
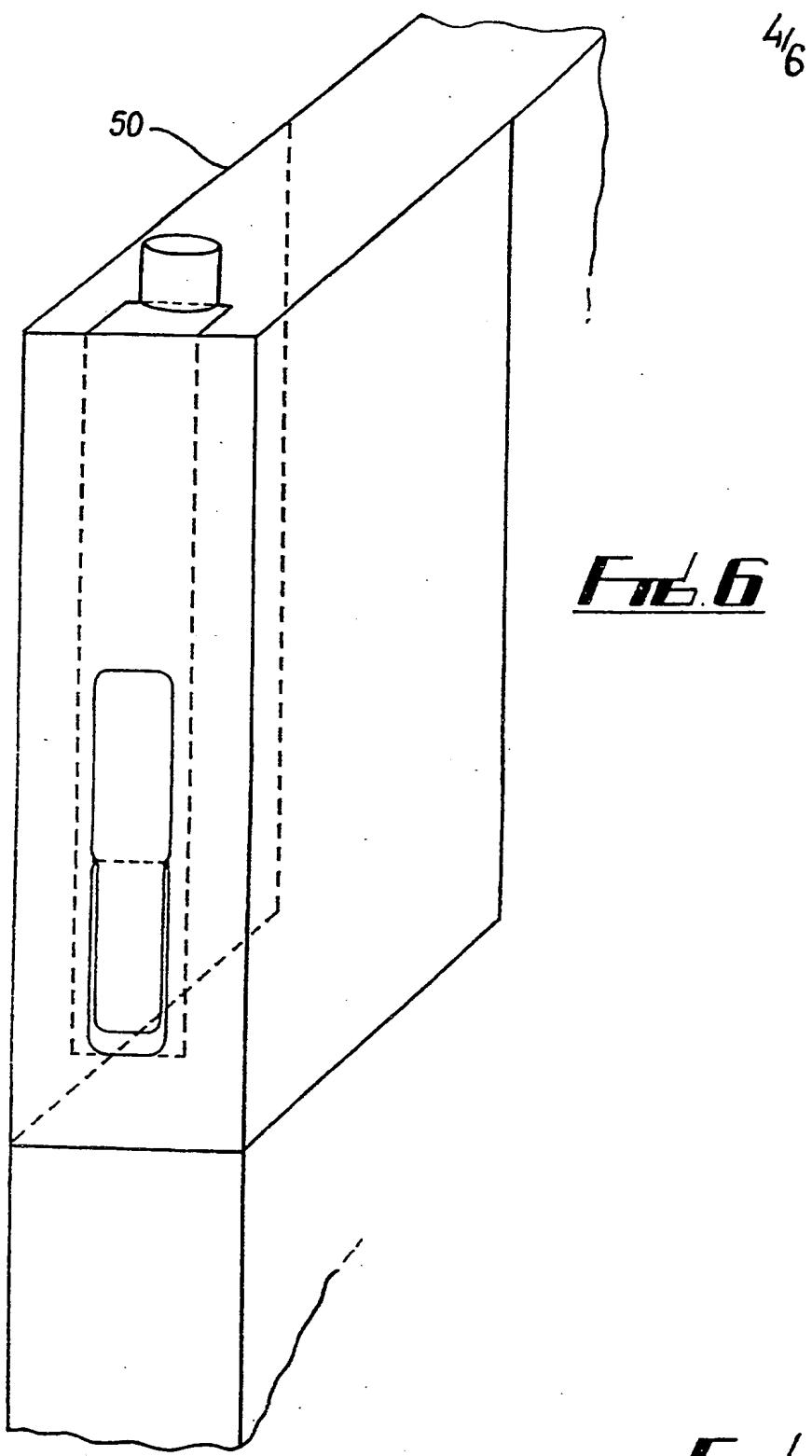


Fig. 3

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FTE.S



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Fig. 6

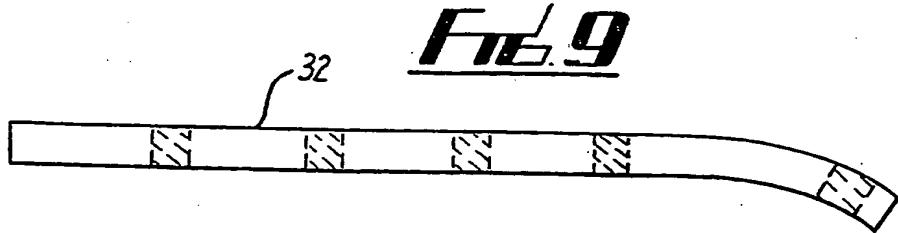


Fig. 9

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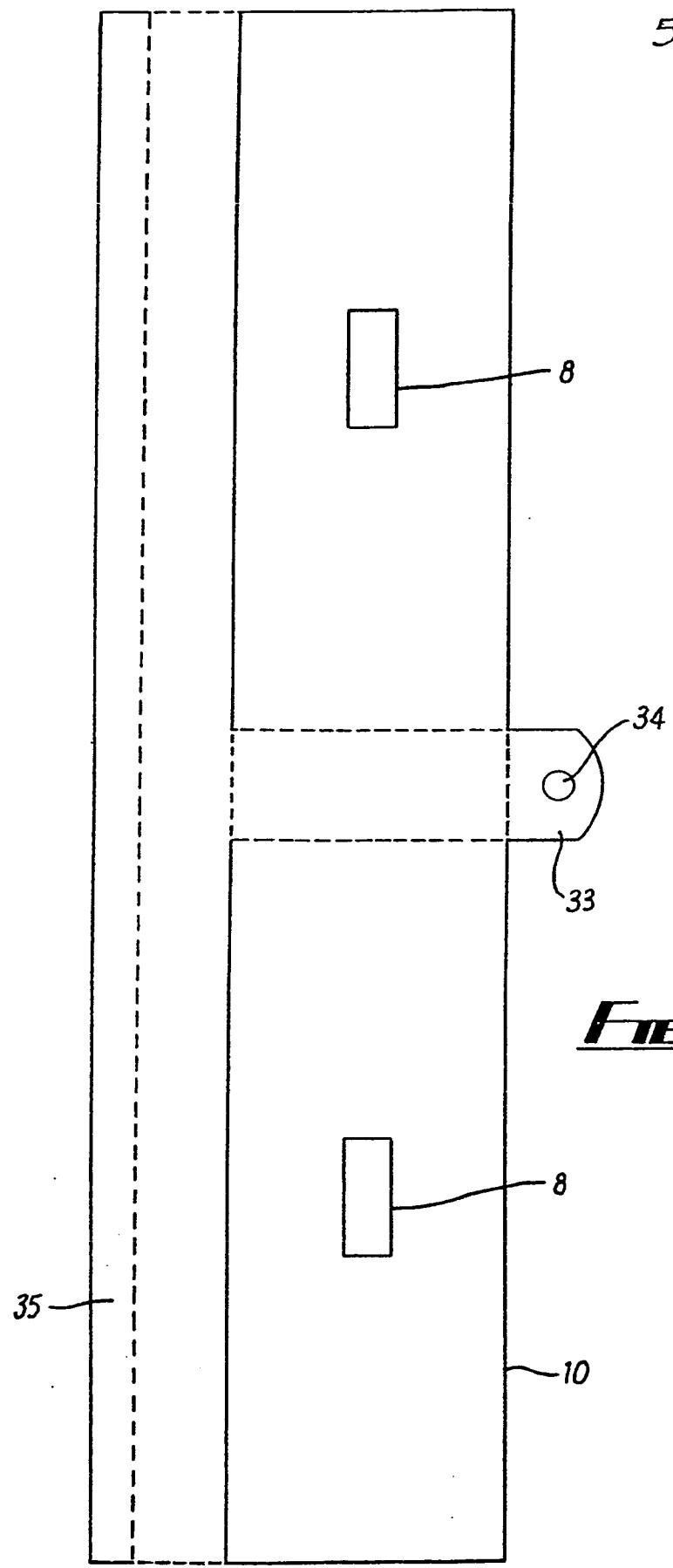


Fig. 7

Fig 8a

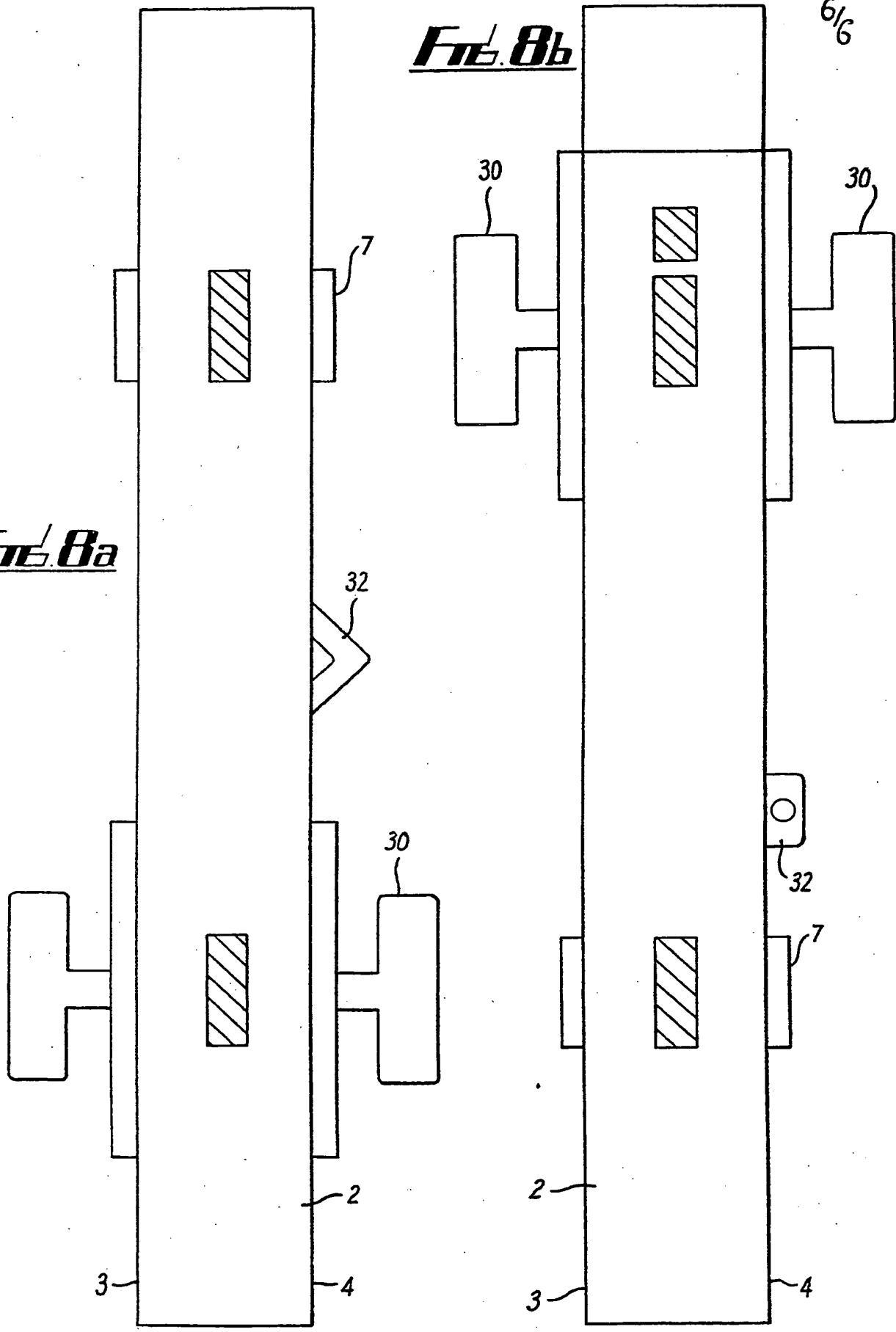
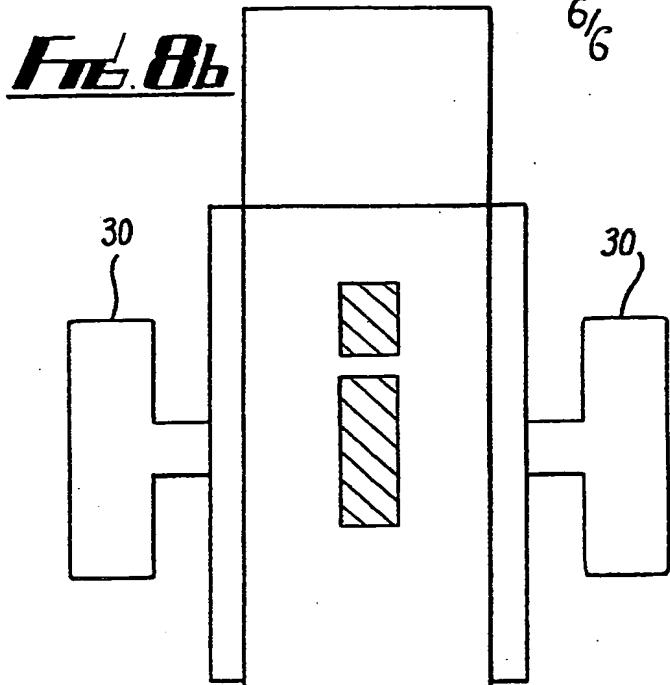


Fig 8b

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1

2     "SECURITY DEVICE"

3

4     This invention is in the field of security devices and  
5     particularly relates to a means of strengthening or  
6     providing reinforcement to locks located in doors or  
7     windows or the like.

8

9     A common method of providing locking means in a door or  
10    window or the like, hereinafter referred to as opening  
11    members, is to cause a metal bar housed within an  
12    opening member to protrude into a receiving aperture  
13    located within the frame or door jam or the like  
14    surrounding said opening member such as to prevent the  
15    opening member from movement.

16

17    However, it is found in practice that thieves or  
18    burglars are able to gain forced entry through an  
19    opening member by chiselling or otherwise breaking the  
20    locking means and thus opening the respective door or  
21    window. It is also possible to quickly cut round a lock  
22    such that the locking means is detached from the  
23    opening member.

24

1 In the past, in order to overcome this problem, it has  
2 been common to use a multiple number of locks such that  
3 each lock must be broken or cut around in order to gain  
4 access. Yet, for each lock or each locking means  
5 provided in an opening member there is required a  
6 separate hole for location of the locking bar. The  
7 plurality of holes or apertures weakens the door or  
8 window and reduces the force required to "kick in" the  
9 opening member by tearing of the timber or surrounding  
10 material away from the locking bars.

11  
12 According to the present invention a security device  
13 comprises a first plate adapted to be attached, and  
14 provide reinforcement, to an opening member in the  
15 proximity of a locking means, wherein said first plate  
16 is in the form of a C-channel having front, orthogonal  
17 and rear sides, said first plate being adapted to  
18 partially surround a front, end, and rear side of said  
19 opening member.

20  
21 Optionally, said first plate also includes a horizontal  
22 side spanning the respective upper or lower edges of  
23 the front and rear sides, wherein said horizontal side  
24 is adapted to partially surround a respective upper or  
25 lower horizontal side of said opening member.

26  
27 The first plate may include at least one aperture  
28 suitably located in the orthogonal or horizontal side  
29 and sized for surrounding a locking bar or bolt;  
30 alternatively the first plate may incorporate one or  
31 more locking means.

32  
33 Preferably, said first plate includes a plurality of  
34 apertures for the location of fastening members, such

1 as screws, for fastening said first plate to said  
2 opening member.

3 Preferably, said first plate includes further apertures  
4 to prevent interference with handles, protruding  
5 locking mechanisms and so on.

6 Preferably, said security device also includes a second  
7 plate adapted for attachment and reinforcement to a  
8 frame or jam surrounding the opening member.

9 Preferably, the second plate also includes an aperture  
10 suitably sized and located for receiving a locking bar  
11 or bolt.

12 The second plate may be in the form of a C-channel  
13 having front, orthogonal and rear sides, said second  
14 plate being adapted to partially surround a front, end  
15 and rear side of a frame or jam surrounding the opening  
16 member; alternatively the second member may be a flat  
17 plate for attachment to the end of a frame or jam.

18 Preferably, the security means also includes a first  
19 chain bar attachable to the opening member and  
20 partially overlapped by said first plate.

21 Preferably, the invention also includes a second chain  
22 bar which is attachable to the jam or surround of the  
23 opening member.

24 Preferably, said second chain bar is partially  
25 overlapped by said second plate.

26 Preferably, a chain or other detachable securing means  
27

1       is attachable between said first and second chain bars.

2  
3       Preferably, said second chain bar is provided with a  
4       resting means for resting said chain thereon when chain  
5       is dettached from said first chain bar.

6  
7       Alternatively, one or both of the chain bars are welded  
8       to the respective first and second plates.

9  
10      Preferably, the plates are made from a metal material.

11  
12      Embodiments of the invention will now be described by  
13       way of example only with reference to the accompanying  
14       drawings, in which:

15       Fig 1 is a pictorial view of a first plate in  
16       accordance with the invention, without an  
17       incorporated locking means;  
18       Fig 2 is an end view of a plate shown in Fig 1;  
19       Fig 3 is a pictorial view of a second plate in  
20       accordance with the invention;  
21       Fig 4 is a front view of a security device in  
22       accordance with the invention positioned on a door;  
23       Fig 5 is a pictorial view of a further security  
24       device in accordance with the present invention  
25       with a chain attachment;  
26       Fig 6 is a pictorial view of a yet further security  
27       device in accordance with the present invention  
28       with a chain attachment;  
29       Fig 7 is a flat second plate member with a chain  
30       attachment and overlapping door-stop member in  
31       accordance with the present invention;  
32       Figs 8a and 8b are end views of first plate members  
33       with various lock, handle and chain attachment  
34       arrangements in accordance with the invention; and

1           Fig 9 is a chain bar used in an embodiment of the  
2           invention.

3  
4           A security device for strengthening and reinforcing  
5           doors and windows and the like, together with their  
6           surrounding frames, in proximity to their locking  
7           mechanisms includes a first plate 2. Embodiments of  
8           the first plate are shown in Figs 1, 6, 8a and 8b. In  
9           these embodiments the plate is substantially formed in  
10          the shape of a C-channel having a front side 3, and a  
11          rear side 4 opposing the front side 3 together with a  
12          third orthogonal side 5 separating the front 3 and rear  
13          4 sides. The embodiment shown in Figure 6 further  
14          includes a horizontal side 50, spanning the upper edges  
15          of the front 3 and rear sides 4.

16  
17          The first plate 2 is sized such that it is adapted to  
18          fit snugly over the end of a door or window. Thus, the  
19          internal distance between the front 3 and rear 4 sides  
20          the plate 2 approximate the width of the door or window  
21          at the location required for reinforcement.

22  
23          The front and rear sides of the plate 2 may be of any  
24          suitable height and width in order to reinforce and  
25          strengthen the door or window in the proximity of as  
26          many locking mechanisms as required. It is appreciated  
27          in the invention that the larger the size of the front  
28          and rear sides of the plate, the greater the area of  
29          the door or window over which any external stresses  
30          imposed on the lock, door, window or plate may be  
31          absorbed. Furthermore, the front and rear sides of the  
32          first or second plate need not be rectangular, and  
33          there is no limit to the shape which may be employed  
34          for functional and aesthetic reasons.

Additionally, the front and rear sides or the plate 2 include small apertures 6 for screwing or otherwise attaching said plate 2 to the door or window. Again, the greater the number of such fastening means, the less stress required to be absorbed by each and therefore, the less risk of the door or window being ripped away from a lock or locks.

In the embodiments, the front and rear sides of the plate also include apertures 7 through which keys may be inserted for unlocking or locking any locking mechanism located in the door or window. Further apertures 20 may be provided for handles 30 or the like. Yet further apertures 8 are provided in respect of each locking bar and these apertures are located in the orthogonal side of the plate. The plate may alternatively include an incorporated locking means which is placed in a recessed area of the door or window (not shown).

Turning now to Fig 3, a second plate 10 is provided and has a profile in accordance with a frame of jam or the like surrounding an opening member such as a door or window. Similar to the first plate, the second plate 10 includes a front side 11 and a rear side 12. Further orthogonal sides 13, 14 are provided in order to correspond to the profile of the frame or door jam. An alternative embodiment of the second plate is shown in Fig 7. This second plate is a flat plate which is placed on the internal orthogonal side of a frame or jam. The orthogonal sides are provided with apertures 15, which correspond in size and location to apertures 8 included in the first plate and location and size of

1 locking bars comprised in any locking mechanisms  
2 included in the opening member.

3  
4 Thus, each locking bar when in a locking position, such  
5 as shown in Fig 4, is reinforced by the orthogonal side  
6 5 on the first plate 2 and an orthogonal side 13 or 14  
7 on the second plate 10. The reinforcement provided by  
8 the combination of the orthogonal plates ensures that a  
9 locking bar 21 may not be easily ripped through an  
10 opening member or its surrounding frame.

11  
12 Fig 5 shows the security device in situ with a chain 31  
13 attached to the first and second plates to enable the  
14 door or window to be opened slightly to see (in the  
15 case of a door) or talk to a person on the other side  
16 of the door or window without loss of security.

17  
18 The chain 31 is attached to chain bars 32 shown in  
19 Figs 5, 8a and 8b and 9, these chain bars are welded to  
20 the first and second plates. In an alternative  
21 embodiment they may be recessed into the frame or  
22 opening member and then overlapped by the first and  
23 second plates.

24  
25 Fig 7 shows an alternative form of attachment member 33  
26 used with a flat second plate member. This attachment  
27 member is in the form of a bar situated between the  
28 second plate member and the door or window portion  
29 projecting with an aperture 34 to which the chain 31  
30 may be attached. Fig 7 also shows a door stop member  
31 35, preferably of wood overlapping the second plate  
32 member to provide additional strength and to reduce  
33 noise when closing the door.

34

1 In an alternative embodiment a first plate may comprise  
2 front, orthogonal and rear sides adapted to be snugly  
3 located over an opening member which does not, as yet,  
4 include a locking mechanism. Accordingly, a locking  
5 mechanism, such as a bolt, may be attached to the  
6 exterior of the first plate, suitable locating or  
7 holding means for the bolt or the like being attached  
8 to the exterior of a second plate on the frame or  
9 surrounding of the opening member.

10  
11 The invention may also include ornate coverings to hide  
12 or camouflage bolt heads and the like. These can be  
13 incorporated into the design of a shield or badge, but  
14 are of course not limited to any particular design in  
15 the invention.

16  
17 It may be seen that the invention may be easily  
18 manufactured and adapted to suit any locking mechanism  
19 and any opening member with surrounding frame. This  
20 includes the application where the door may have an  
21 internal locking system as illustrated in Figure 6. In  
22 such doors, the locking bolt or mechanism may extend  
23 into the frame or jam vertically from the top of the  
24 opening member, or alternatively into the floor from  
25 the bottom of the opening member. In order to provide  
26 protection for such arrangements the first plate  
27 includes a horizontal edge 50 which has an aperture for  
28 receiving the locking bolt therethrough. Thus for a  
29 wide variety of locking systems and at a relatively low  
30 cost a significant improvement may be made to the  
31 security of a house or building or the like.

32  
33 The invention may be made of any suitable material  
34 having required strength properties, such, for example,

1 as steel, aluminium, various alloys thereof and even  
2 certain tough plastics.

3 It is also realised in the invention that should it not  
4 be aesthetically or otherwise desirable to include a  
5 front or rear side on either of the first or second  
6 plates, then such sides may be omitted. While this may  
7 result in some detraction of the strength of the  
8 security device, the general purpose and spirit of the  
9 device is still possible.  
10

11

1

2 CLAIMS

3

4     1. A security device comprising a first plate adapted  
5     to be attached, and provide reinforcement, to an  
6     opening member in the proximity of a locking means,  
7     wherein said first plate is in the form of a C-channel  
8     having front, orthogonal and rear sides, said first  
9     plate being adapted to partially surround a front, end,  
10    and rear side of said opening member.

11

12    2. A security device as claimed in Claim 1 wherein  
13    said first plate also includes a horizontal side  
14    spanning the respective upper or lower edges of the  
15    front and rear sides, and wherein said horizontal side  
16    is adapted to partially surround a respective upper or  
17    lower horizontal side of said opening member.

18

19    3. A security device as claimed in Claim 1 or Claim 2,  
20    wherein the first plate includes at least one aperture  
21    suitably located in the orthogonal or horizontal side  
22    and sized for surrounding a locking bar or bolt.

23

24    4. A security device as claimed in Claim 1 or Claim  
25    2, wherein the first plate incorporates one or more  
26    locking means.

27

28    5. A security device as claimed in any one of the  
29    preceding claims, wherein said first plate includes a  
30    plurality of apertures for the location of fastening  
31    members, such as screws, for fastening said first plate  
32    to said opening member.

33

34    6. A security device as claimed in any one of the

1 preceding claims, wherein said first plate includes  
2 further apertures to prevent interference with handles,  
3 protruding locking mechanisms and so on.

4 7. A security device as claimed in any one of the  
5 preceding claims, wherein said security device also  
6 includes a second plate adapted for attachment and  
7 reinforcement to a frame or jam surrounding the opening  
8 member.

9 10 8. A security device as claimed in any one of the  
11 preceding claims, wherein the second plate also  
12 includes an aperture suitably sized and located for  
13 receiving a locking bar or bolt.

14 15 9. A security device as claimed in any one of the  
16 preceding claims, wherein the second plate may be in  
17 the form of a C-channel having front, orthogonal and  
18 rear sides, said second plate being adapted to  
19 partially surround a front, end and rear side of a  
20 frame or jam surrounding the opening member.

21 22 10. A security device as claimed in any one of the  
23 preceding claims, wherein the second member is a flat  
24 plate for attachment to the end of a frame or jam.

25 26 11. A security device as claimed in any one of the  
27 preceding claims also including a first chain bar  
28 attachable to the opening member and partially  
29 overlapped by said first plate.

30 31 12. A security device as claimed in any one of the  
32 preceding Claims also including a second chain bar  
33 which is attachable to the jam or surround of the

1 opening member.

2  
3 13. A security device as claimed in any one of the  
4 preceding Claims, wherein said second chain bar is  
5 partially overlapped by said second plate.

6  
7 14. A security device as claimed in any one of the  
8 preceding Claims, wherein a chain or other detachable  
9 securing means is attachable between said first and  
10 second chain bars.

11  
12 15. A security device as claimed in Claim 14 wherein  
13 said second chain bar is provided with a resting means  
14 for resting said chain thereon when chain is detached  
15 from said first chain bar.

16  
17 16. A security device as claimed in any one of the  
18 preceding claims wherein one or both of the chain bars  
19 are welded to the respective first and second plates.

20  
21 17. A security device as claimed in any one of the  
22 preceding claims, wherein the plates are made from a  
23 metal material.

24  
25 18. A security device substantially as described or  
26 illustrated hereinbefore.

27

Patents Act 1977  
Examiner's report to the Comptroller under  
Section 17 (The Search Report)

Application number

GB 9307047.2

Relevant Technical fields

(i) UK CI (Edition L ) E2A (APE); E1J (JFG)

Search Examiner

J D WILSON

(ii) Int CI (Edition 5 ) E05B 17/00 17/20

Databases (see over)

(i) UK Patent Office

Date of Search

(ii)

28 MAY 1993

Documents considered relevant following a search in respect of claims

ALL

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X, E	GB 2258262 A (WARZYK) whole document	1, 3-6 at least
X	GB 2201994 A (McDONALD) whole document	1, 3-8, 10 at least
X	GB 2197677 A (KILHALE LTD) note Figures 13 & 14	1, 3-11 at least
X	US 4139999 (ALLENBAUGH) whole document	1, 3-6 at least
X	US 3936085 (LONG) see especially Figures 1 and 4	1, 3-8, 11 to 14 at least
X	US 3934910 (RADKE) whole document	1, 3-8 at least
X	US 3888530 (FABRICI) whole document	1, 3-9 at least

Category	Identity of document and relevant passages	Relevant to claim(s)

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X: Document indicating lack of novelty or of inventive step.

Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.

A: Document indicating technological background and/or state of the art.

P: Document published on or after the declared priority date but before the filing date of the present application.

E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.

&: Member of the same patent family, corresponding document.

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